**Drawings**:

Applicant kindly requests the examiners help regarding exact terminology.

On page 3, paragraph 5, lines 3-7, the office action reads:
"Although it may be said that a Variac controller (as disclosed in Applicants specification) has infinite multiple positions; in a conventional Variac, these infinite positions do not correspond to an infinite number of tap positions, but a finite number of tap positions where a wiper contact slides along the edges of an arcuate coil, progressively making contact with each succeeding turn or group of turns of the coil."

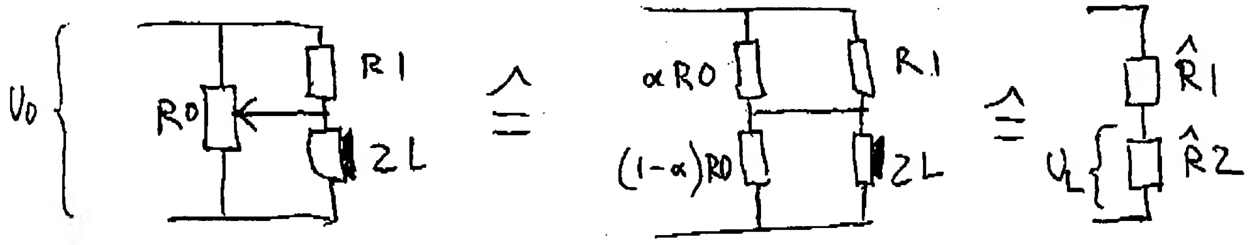
On page 10, paragraph 19, lines 10-15, the office action reads:
"Gonzalez discloses using a Variac (a continuously-tapped autotransformer coil having variable controller with a control knob connected to it, said controller having infinite multiple positions corresponding to an infinite amount of tap positions along the continuously-tapped coil to define first and second impedance means) with a tube amplifier as an infinite-tap output transformer by connecting the Variac...... "

Applicant wishes to disclose the use of a regular Variac (probably the same kind as used by Gonzalez) with the invention. Applicant is not a native English speaker and respectfully whishes to ask the examiner for help to find the correct terminology.

Applicant is not sure weather the drawings can be corrected in such a way to match a definition of a Variac as

a) a device having a controller having infinite multiple positions corresponding to an infinite amount of tap positions along a continuously-tapped coil; or

# Appendix A I




SCHOLZ

α represents a value from 0 - 1
(attenuation according to position of switch)

$$\hat{R}1 = \frac{\alpha R0 \cdot R1}{\alpha R0 + R1}, \quad \hat{R}2 = \frac{(1-\alpha) R0 \cdot ZL}{(1-\alpha) R0 + ZL}$$

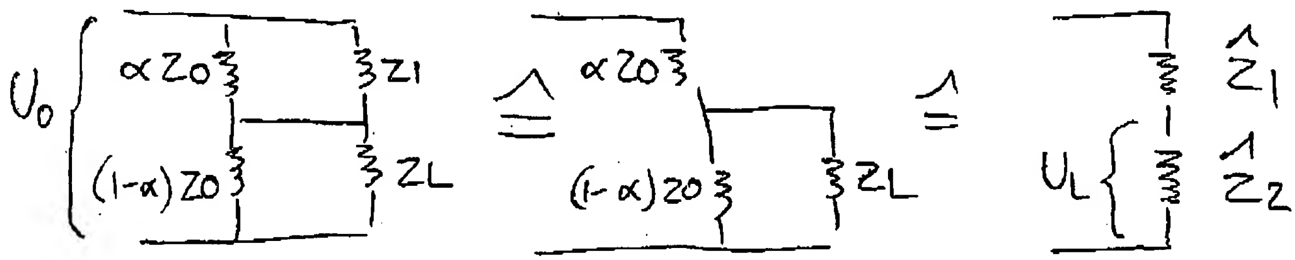
$$U_L = \frac{\hat{R}_2}{\hat{R}_1 + \hat{R}_2} U_0 = \frac{1}{1 + \frac{\hat{R}_1}{\hat{R}2}} U_0 = \frac{1}{1 + \left(\frac{\alpha}{1-\alpha}\right) \frac{R_1}{Z_L} \cdot \frac{(1-\alpha) R0 + ZL}{\alpha R0 + R1}}$$

(If assumed that $ZL < R0$ (SCHOLZ requires $R1 + ZL \leq R0$))

$$U_L = \frac{1}{1 + \left(\frac{\alpha}{1-\alpha}\right) \frac{R1}{ZL} \cdot \frac{(1-\alpha) R0}{\alpha R0 + R1}} U_0 \approx \frac{1}{1 + \alpha \frac{R0}{ZL}} U_0$$

Because $ZL$ is frequency-dependent $(R_2 - i\omega L)$ the voltage $U_L$ is not in constant relation to $U_0$

# Appendix A II



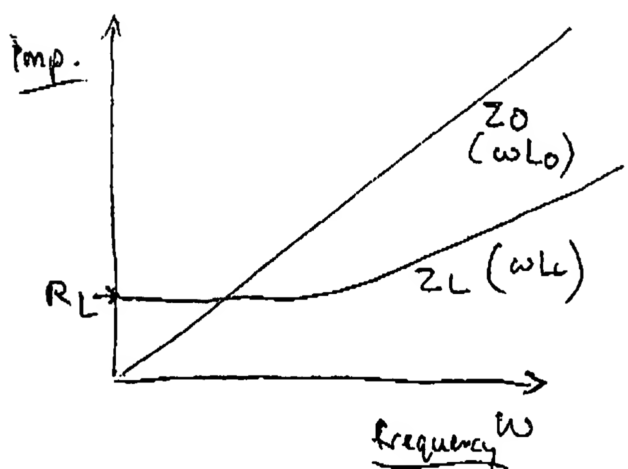

$$U_L = \frac{1}{1+\frac{\hat{Z}_1}{\hat{Z}_2}} = \frac{1}{1+\left(\frac{\alpha}{1-\alpha}\right)\cdot\frac{(1-\alpha)Z_0+Z_L}{Z_L}}\, U_0$$

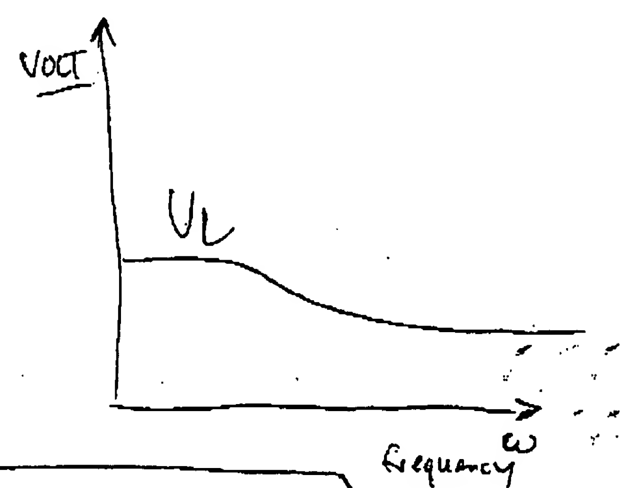
For low frequencies ($Z_0 \ll Z_L$)

$$U_L \approx \frac{1}{1+\left(\frac{\alpha}{1-\alpha}\right)}\, U_0$$

For high frequencies ($Z_L \ll Z_0 \approx -i\omega L_0$)

$$U_L \approx \frac{1}{1+\left(\frac{\alpha}{1-\alpha}\right)\cdot\frac{(1-\alpha)L_0}{L_L}}$$

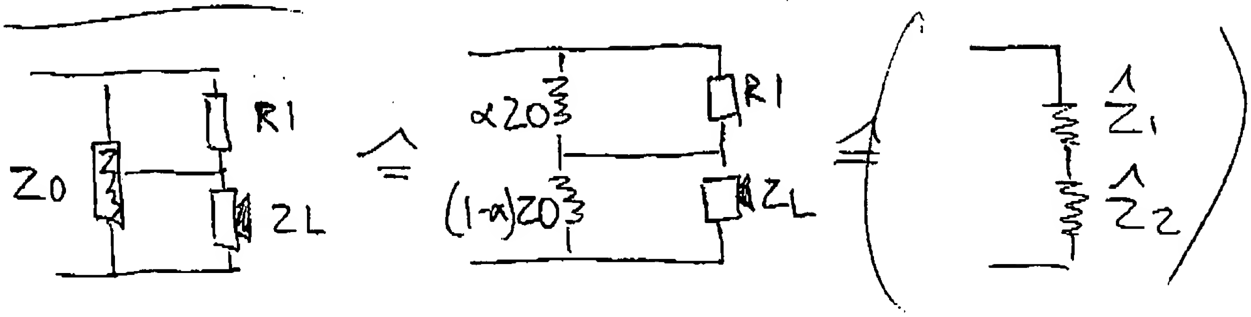



Frequency-dependent in first order

# Appendix A

III




see I

$$U_L = \frac{1}{1 + \left(\frac{\alpha}{1-\alpha}\right) \frac{R_1}{Z_L} \cdot \frac{(1-\alpha) Z_0 + Z_L}{\alpha Z_0 + R_1}} U_0$$

$Z_0$ is in approximate proportion to $Z_L$ $\Rightarrow$ $Z_0 = \beta Z_L$

$R_1$ is Larger than $Z_0$ $\Rightarrow$ $\alpha Z_0 + R_1 \approx R_1$

$$U_L \approx \frac{1}{1 + \left(\frac{\alpha}{1-\alpha}\right) \cdot \left[1 + \beta (1-\alpha)\right]} U_0$$

no frequency-dependence in first order!